Aerial Lift and Chipper Safety

Presented by:

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Aerial Lifts

Aerial lifts permit workers to safely and efficiently access elevated portions of trees to conduct required work

Aerial Lifts

Permit unqualified individuals to easily enter potentially dangerous sites high in trees

- Significantly increases risk to worker and public
- Results in injuries and sometimes fatalities
- Damages trees

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Aerial Lift Accidents

Most common:

- Overturns
- Falls from platform
- Boom collapse
- Crushing
- Electrocution

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Aerial Lift Accidents

Fatality Statistics:

Cause	Boom-supported lifts	Scissor lifts	Unknown type of lift	Total
Electrocutions	62	6	-	69
Falls	35	23	6	64
Collapses or tipovers	23	21	-	46
Caught in/between	11	-	-	14
Struck by/against	6	-	-	9
Other causes	5	-	-	5
Total deaths	142	55	10	207

Aerial Lift Safety

Always follow safety requirements:

- Applicable laws and regulations
- ANSI standards
- Manufacturer's operating instructions

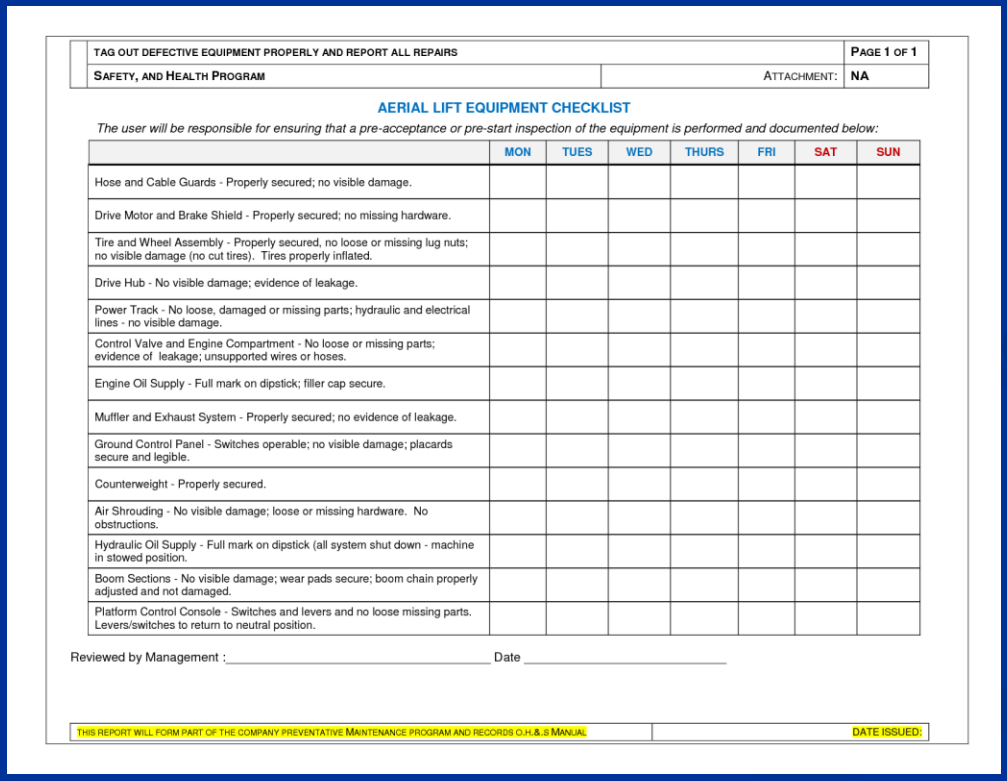
Aerial Lift Safety

Adequate training, maintenance and operation is critical to avoid serious injury, death and property damage:

- Qualified Operator
- Properly use required personal protective equipment
- Conduct correct inspection and maintenance practices
- Follow safe lift transport and set-up
- Practice correct, safe operating procedures

Aerial Lift Safety

Checklist based on the manufacturer's operator's manual is excellent guide to direct and record each inspection, maintenance and set-up operation.



TAG OUT DEFECTIVE EQUIPMENT PROPERLY AND REPORT ALL REPAIRS		PAGE 1 OF 1
SAFETY, AND HEALTH PROGRAM	ATTACHMENT:	NA

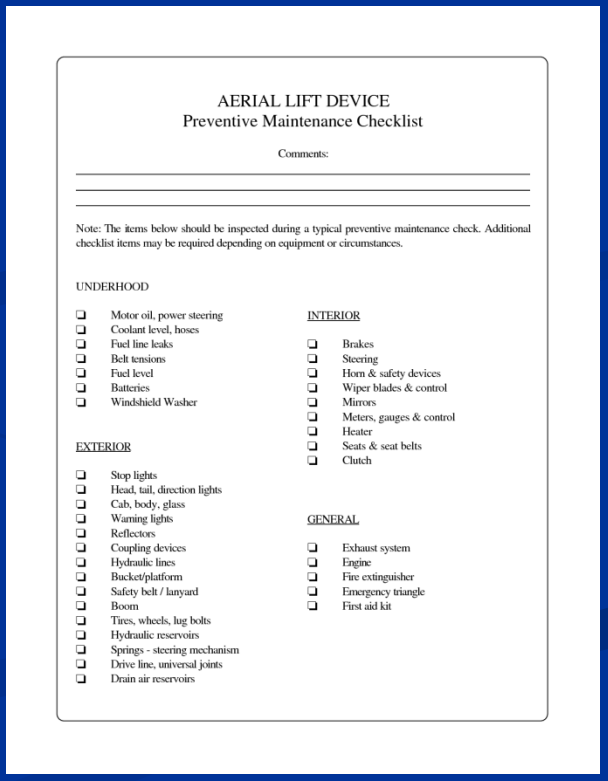
AERIAL LIFT EQUIPMENT CHECKLIST

The user will be responsible for ensuring that a pre-acceptance or pre-start inspection of the equipment is performed and documented below:

	MON	TUES	WED	THURS	FRI	SAT	SUN
Hose and Cable Guards - Properly secured; no visible damage.							
Drive Motor and Brake Shield - Properly secured; no missing hardware.							
Tire and Wheel Assembly - Properly secured, no loose or missing lug nuts; no visible damage (no cut tires). Tires properly inflated.							
Drive Hub - No visible damage; evidence of leakage.							
Power Track - No loose, damaged or missing parts; hydraulic and electrical lines - no visible damage.							
Control Valve and Engine Compartment - No loose or missing parts; evidence of leakage; unsupported wires or hoses.							
Engine Oil Supply - Full mark on dipstick; filler cap secure.							
Muffler and Exhaust System - Properly secured; no evidence of leakage.							
Ground Control Panel - Switches operable; no visible damage; placards secure and legible.							
Counterweight - Properly secured.							
Air Shrouding - No visible damage; loose or missing hardware. No obstructions.							
Hydraulic Oil Supply - Full mark on dipstick (all system shut down - machine in stowed position.							
Boom Sections - No visible damage; wear pads secure; boom chain properly adjusted and not damaged.							
Platform Control Console - Switches and levers and no loose missing parts. Levers/switches to return to neutral position.							

Reviewed by Management :_____ Date _____

THIS REPORT WILL FORM PART OF THE COMPANY PREVENTATIVE MAINTENANCE PROGRAM AND RECORDS O.H.&.S MANUAL	DATE ISSUED:



AERIAL LIFT DEVICE
Preventive Maintenance Checklist

Comments:

Note: The items below should be inspected during a typical preventive maintenance check. Additional checklist items may be required depending on equipment or circumstances.

UNDERHOOD

- ❑ Motor oil, power steering
- ❑ Coolant level, hoses
- ❑ Fuel line leaks
- ❑ Belt tensions
- ❑ Fuel level
- ❑ Batteries
- ❑ Windshield Washer

EXTERIOR

- ❑ Stop lights
- ❑ Head, tail, direction lights
- ❑ Cab, body, glass
- ❑ Warning lights
- ❑ Reflectors
- ❑ Coupling devices
- ❑ Hydraulic lines
- ❑ Bucket/platform
- ❑ Safety belt / lanyard
- ❑ Boom
- ❑ Tires, wheels, lug bolts
- ❑ Hydraulic reservoirs
- ❑ Springs - steering mechanism
- ❑ Drive line, universal joints
- ❑ Drain air reservoirs

INTERIOR

- ❑ Brakes
- ❑ Steering
- ❑ Horn & safety devices
- ❑ Wiper blades & control
- ❑ Mirrors
- ❑ Meters, gauges & control
- ❑ Heater
- ❑ Seats & seat belts
- ❑ Clutch

GENERAL

- ❑ Exhaust system
- ❑ Engine
- ❑ Fire extinguisher
- ❑ Emergency triangle
- ❑ First aid kit

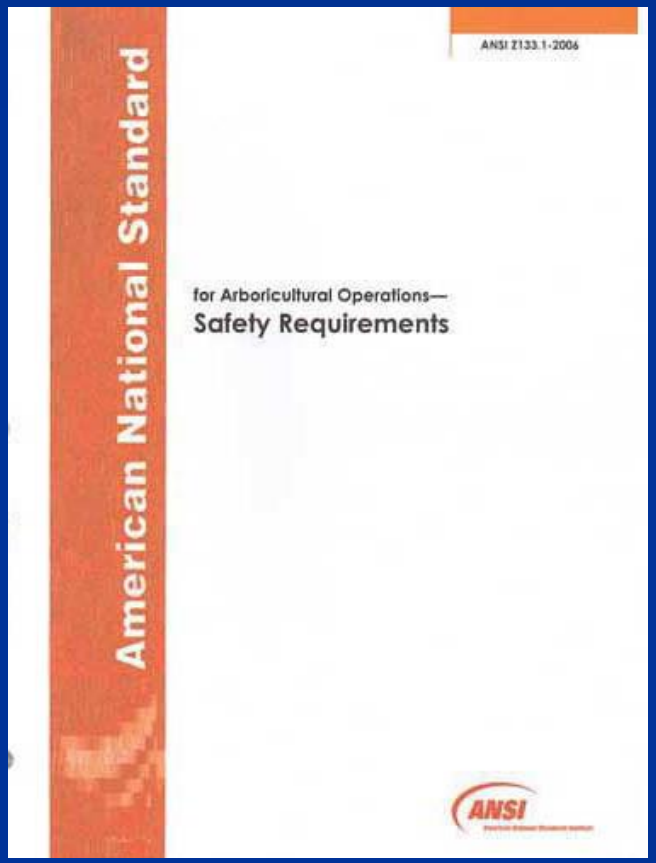
Qualified Operator

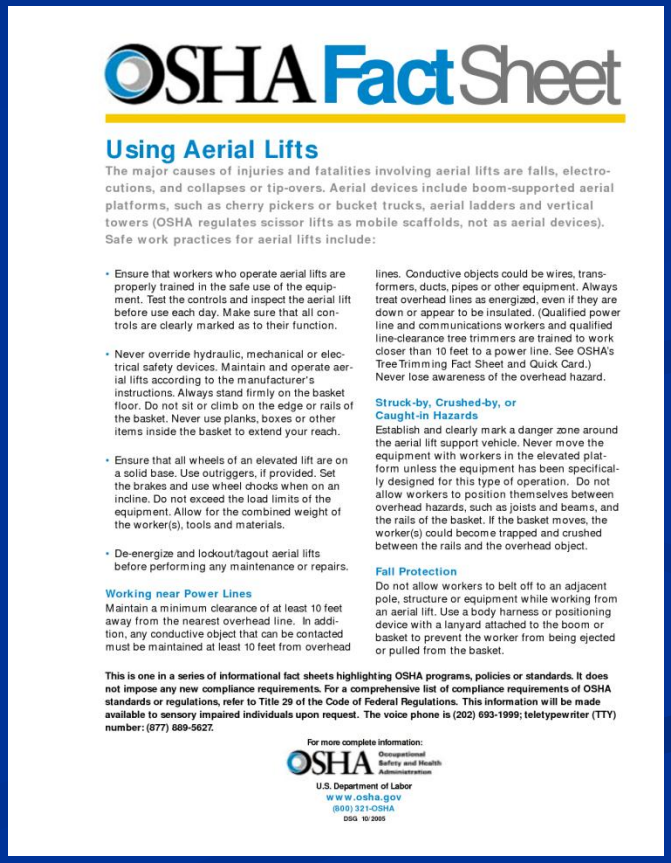
Qualification requires training, knowledge, experience and demonstrated proficiency:

- **Read and understand operator's manual**

Qualified Operator

Understand laws and regulations that affect the equipment and job





OSHA Fact Sheet

Using Aerial Lifts

The major causes of injuries and fatalities involving aerial lifts are falls, electrocutions, and collapses or tip-overs. Aerial devices include boom-supported aerial platforms, such as cherry pickers or bucket trucks, aerial ladders and vertical towers (OSHA regulates scissor lifts as mobile scaffolds, not as aerial devices). Safe work practices for aerial lifts include:

- Ensure that workers who operate aerial lifts are properly trained in the safe use of the equipment. Test the controls and inspect the aerial lift before use each day. Make sure that all controls are clearly marked as to their function.
- Never override hydraulic, mechanical or electrical safety devices. Maintain and operate aerial lifts according to the manufacturer's instructions. Always stand firmly on the basket floor. Do not sit or climb on the edge or rails of the basket. Never use planks, boxes or other items inside the basket to extend your reach.
- Ensure that all wheels of an elevated lift are on a solid base. Use outriggers, if provided. Set the brakes and use wheel chocks when on an incline. Do not exceed the load limits of the equipment. Allow for the combined weight of the worker(s), tools and materials.
- De-energize and lockout/tagout aerial lifts before performing any maintenance or repairs.

Working near Power Lines

Maintain a minimum clearance of at least 10 feet away from the nearest overhead line. In addition, any conductive object that can be contacted must be maintained at least 10 feet from overhead lines. Conductive objects could be wires, transformers, ducts, pipes or other equipment. Always treat overhead lines as energized, even if they are down or appear to be insulated. (Qualified power line and communications workers and qualified line-clearance tree trimmers are trained to work closer than 10 feet to a power line. See OSHA's Tree Trimming Fact Sheet and Quick Card.) Never lose awareness of the overhead hazard.

Struck-by, Crushed-by, or Caught-in Hazards

Establish and clearly mark a danger zone around the aerial lift support vehicle. Never move the equipment with workers in the elevated platform unless the equipment has been specifically designed for this type of operation. Do not allow workers to position themselves between overhead hazards, such as joists and beams, and the rails of the basket. If the basket moves, the worker(s) could become trapped and crushed between the rails and the overhead object.

Fall Protection

Do not allow workers to belt off to an adjacent pole, structure or equipment while working from an aerial lift. Use a body harness or positioning device with a lanyard attached to the boom or basket to prevent the worker from being ejected or pulled from the basket.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For more complete information:

OSHA Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov

(800) 321-OSHA

DSG 10/2005

Qualified Operator

Adequate, hands-on training

- Inspection
- Transport
- Set-up
- Operation

Qualified Operator

Demonstrate proficiency

- Lift operation
- Conduct of work from bucket

Personal Protective Equipment

Select, inspect and properly use all required PPE

- Hard hat
- Body belt/harness
- Lanyard attached to boom or basket
- Eye protection
- Hearing protection?

Aerial Lift Inspection

"Field Modification"

- Modifications in structure, attachments or use not permitted Unless
- Certified in writing by the manufacturer or nationally recognized testing laboratory, to be in conformity with ANSI A92.2-1969 and as safe as before modification

Aerial Lift Inspection

Inspect key operating parts of carrier and lift

- Prior to use each day
- Anytime incident occurs that may damage lift or carrier
- General condition to ensure clean, dry & no significant defects or damage

Aerial Lift Inspection

Insulated Booms for insulator condition (upper and lower)

- Clean and dry
- Damage or defects

Aerial Lift Inspection

Hydraulic system – fluid levels, leaks

Aerial Lift Inspection

Lift cradle – cracks, damage, lift secure

Aerial Lift Inspection

Outriggers – welds and structure cracks, damage

Aerial Lift Inspection

Warning decals in place and readable

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Aerial Lift Inspection

Pylon Mast (pedestal)

- Bolts secure with no defects or damage
- Welds - no cracks or other structural defects

Aerial Lift Inspection

Pivot Pins

- Seated properly
- Bushings wear or damage

Aerial Lift Inspection

Drive cables or chains (if present)

- Lubrication adequate
- Signs of cable fatigue or strands broken
- Break tolerances adequate in a single lay of cable

Aerial Lift Inspection

Guard and covers

- In place and in good condition

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Aerial Lift Inspection

- Hoses:
  - Damage/defects
  - Leaks, cracks, breaks
- Hose connections
  - Secure
  - Cracks, leaks

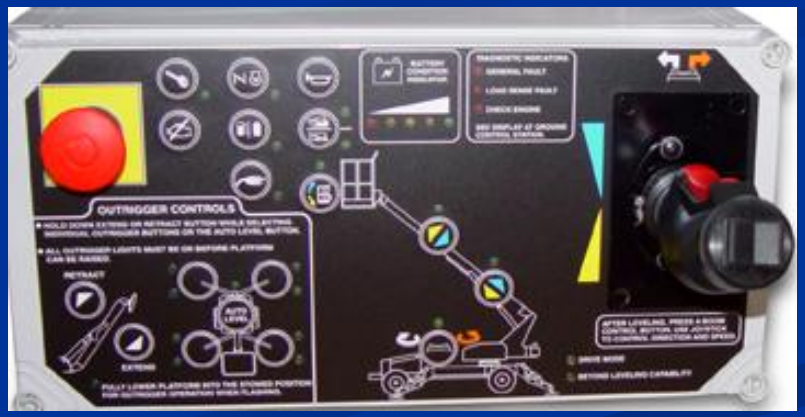
Aerial Lift Inspection

- Drive Cylinders
  - Cylinder Caps - damage, leaking fluid
  - Rod Ends – cracks, excessive wear, damage

Aerial Lift Inspection

Controls

- Labels present and legible
- Test fly all functions –
  - Travel directions smooth and correct
  - Lower control station first, then platform



Aerial Lift Inspection

Bucket/platform

- Welds (cracks)
- Excessive wear
- Damage
- Missing parts
- Proper gate operation
- Lift bolts and cotter pins secure
- Rotation points – cracks, damage

Aerial Lift Inspection

Tires

- Pressure
- Damage
- Lug nuts tight

Aerial Lift Inspection

Brake operation

Aerial Lift Inspection

Safety Devices:

- Lights
- Back-up alarms
- Interlock devices
- Other safety devices

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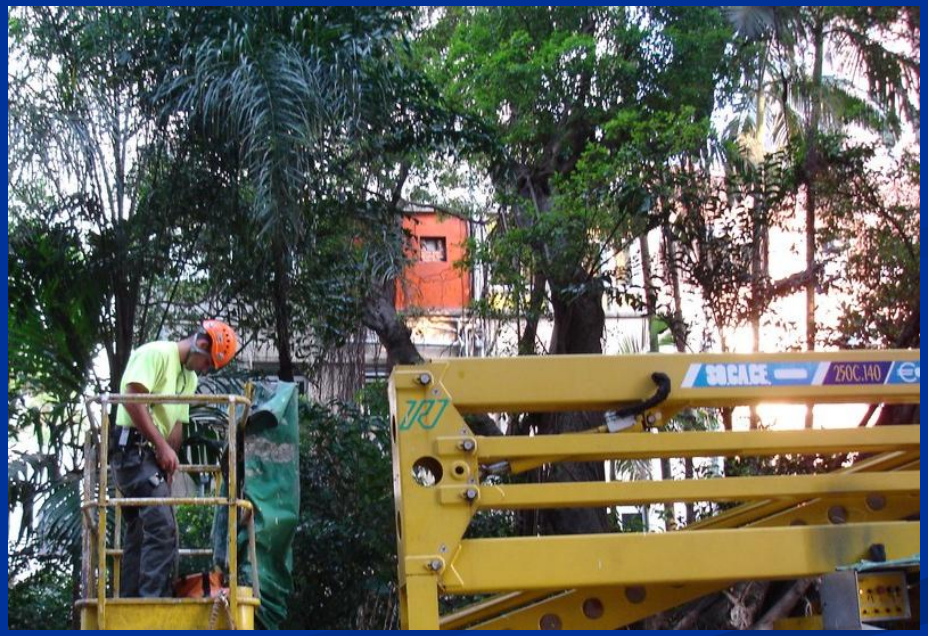
Transport

Ensure carrier and lift secure and safe to move

Transport

- Ensure that the boom is fully retracted/folded
- Cradle and secure boom according to manufacturer



Transport

Stow and secure detachable and portable equipment and attachments

Transport

Know the minimum overhead ground clearance

- Avoid overhead obstructions
  - Low utility lines
  - Bridges
  - Tree branches

Transport

Conduct vehicle inspection to conform to DOT requirements

Transport

Ensure all documents current and stored on truck:

- Current truck inspection
- Lift manual
- Reports for annual inspections required by manufacturer

Equipment Number 454-A | Description 1998 Freightliner FLD12064ST | Year 1998
Equipment Make Freightliner | Vin Number 12321312 | Model FDL12064ST | License Number 5T4585

Truck And/Or Tractor Maintenance & Safety Inspection Report

For The Year Of **2002**

Mileage Hours				502265								
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	OK DEF	OK DEF	OK DEF	OK DEF	OK DEF	OK DEF	OK DEF	OK DEF	OK DEF	OK DEF	OK DEF	OK DEF
Fire Extinguisher & Reflectors - Secured - Marked	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Horn - Defrosters, Gauges and Speedometer	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Mirrors and Supports	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Windshield Wipers - Window Cracks, Condition	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Check All Lights - Turn Signals - Reflectors, Mud Flaps	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Check Electrical Wiring - Condition & Protection	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Check Batteries - Water Terminals and Cable	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Warning Devices - Air, Oil and Temperature, Vacuum	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Radiator & Water hoses - Condition - Leaks	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Belts - Compressor(s), Fan and Water Pump	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Air Lines - Leaks, Condition and Protection	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Fuel Tanks - Lines - Pump, Condition & Protection	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Manifold and Flange Gaskets - Muffler & Condition	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Engine Mounts, Oil & Fuel leaks	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Clutch Adjustment and Free Play	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Throttle and Linkage, Air Filter	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Generator/Alternator, Starter, Brushes and Wiring	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Tractor Protection Valve - Breakaway Test	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Brakes - Lining, Drums, and Adjustment - Near Cam Over, Pedal Ht-Hyd	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Hoses and Tubing - Condition - Protection, Hyd. Brake Reservoir Level	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Air Leaks and 1 Minute Brake Application Test, Vacuum Loss	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Air Governor Adjustment - Min 85 - Max 130	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Identify Number 1 Air Tank - Drain - Test Check Valve	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
All Tanks Secure, Drains Operable, Drain Tanks	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Check Tire and Rim Condition, Cracks, Lugs Loose, Tread Depth	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Parking Brake- Condition and Adjustment	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Emergency Stopping System-Labled, Operable	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Release after Loss of Service Air - Test Anti Skid Lamp	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Check Steering Gear and Mounting - Free Lash	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Steering Arms, Drag Links and Tie Rods	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Fifth Wheel Condition and Mounting	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Springs, Shackles and U-Bolts - Torque Arms	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Check Frame, Cross Members, Cracks, Etc	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Drive Shaft and universal Joints	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Transmission, Differential - Mounting and Seals	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Wheel Seals Leaks, Hydraulic Brake System Leaks	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Clean Under Carriage	☐ ☐	☐ ☐	☑ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐

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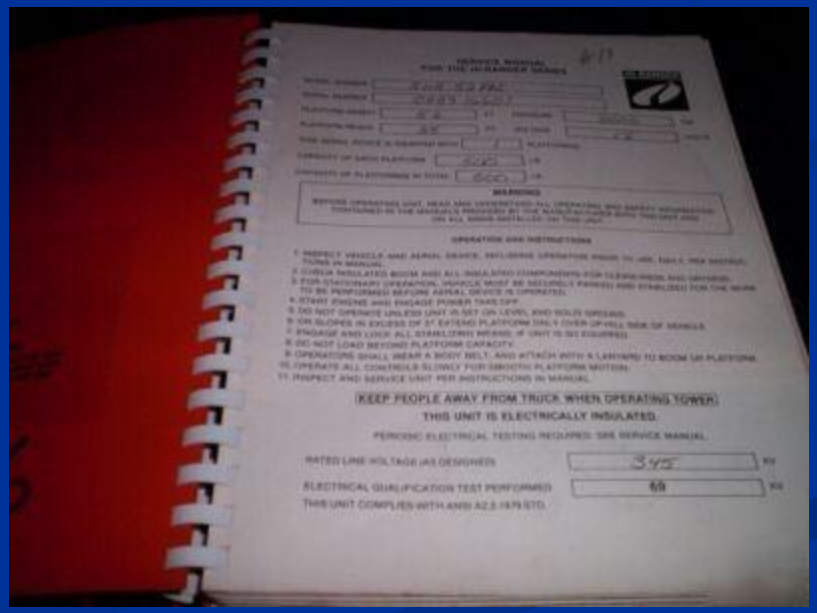


Transport

- Working fire extinguisher stored in appropriate location
- Fully stocked first aid kit, appropriate for the work stored in appropriate location

Transport

Conduct final walk-around inspection

- Ensure all attachments, equipment and lift boom properly secured.

Tree and Site Inspection

Comprehensive tree and site inspection prior to set-up

- Identify hazards and obstacles
- Plan set-up and work

Site Inspection

- Holes, drop-offs, or unstable objects on ground
- Underground voids or structures
    - Septic systems, irrigation, wells, lava tubes, etc.
- Side or overhead obstacles or obstructions to bucket/platform or boom extension or maneuvering
- Overhead electric lines
- Unauthorized vehicles and personnel
- Location and attention of all workers during all operations

Lift/Site Set-up

- Firm
  - will not permit lift to sink or overturn
- Reasonably level ground
  - Within maximum slope defined by manufacturer - generally less than 5 degrees
- Free of obstacles and obstructions
- Free of safety obstacles and obstructions

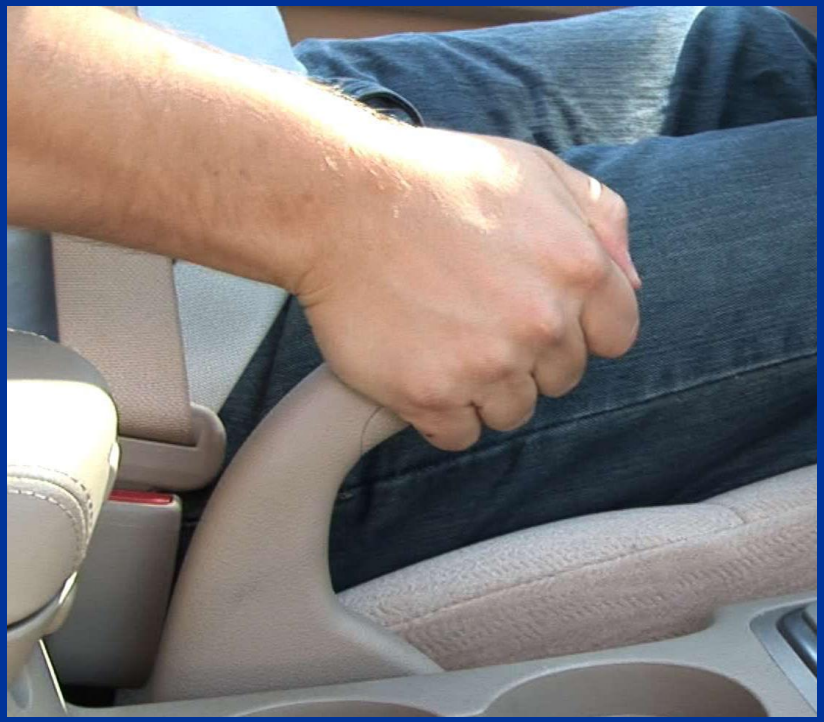
Lift/Site Set-up

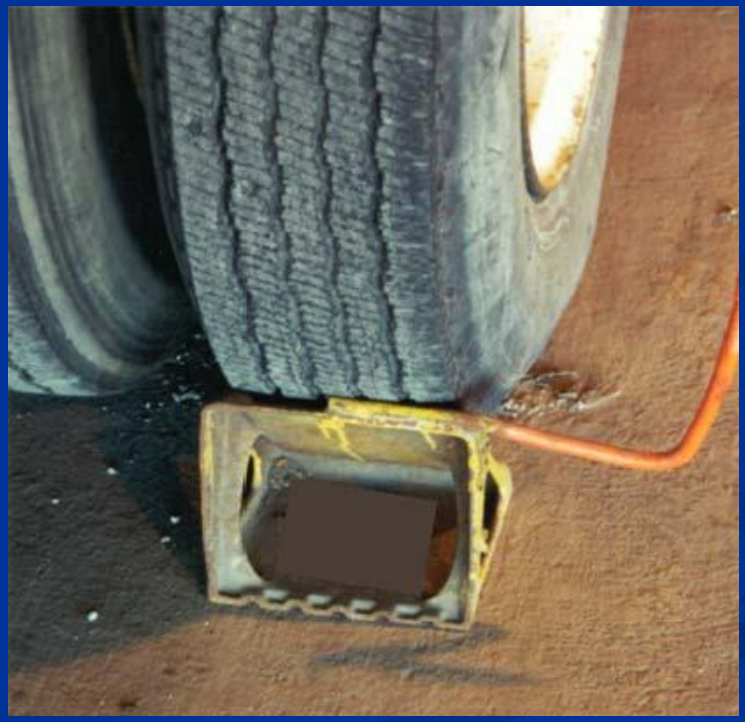
Position lift to:

- Safely and efficiently access work stations
- Minimize reach to horizontal extensions

Lift/Site Set-up

- Set parking brake
- Chock wheels
  - Opposite sides of vehicle and alternate sides of tires





Lift/Site Set-up

Warning signals installed/activated

- Lights, flashers, signs, cones and barriers
- Conformance to local jurisdiction

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Lift/Site Set-up

Outriggers extended and set

- Prior to extending outrigger on opposite side of equipment
  - Operator visually check and call out warning to ensure no personnel within landing zone of outrigger
  - Command and response
- Soft ground or sites where outriggers may damage surface
  - Outrigger pads installed
- Downhill first

Lift/Site Set-up

Emergency rescue kit

- Safe location
- Clear of vehicle
- Easily accessible

Lift/Site Set-up

Final check conducted

- Vehicle stable and in good working order
- Site safe.

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Work Plan/Job Brief

Plan and communicate all safety rules for each job site

- Work tasks and progression
- Potential hazards and their mitigation
- Emergency response plan
- Each worker's tasks, role, responsibility and positioning
- Command and response system
- All required equipment present and good working order.

Safe Operations

Do not operate machinery if:

- Tired
- Using drugs or alcohol
- Do not drive vehicle with the platform elevated

Safe Operations

Minimize electrical contacts risk

- All employees attend Electrical Hazard Awareness Program in conformance with OSHA and ANSI requirements
- Worksite inspection
- Only qualified electrical line clearance workers can work near energized electrical equipment
- Maintain distance of > 10 feet from all energized conductors
  - Clearance includes person, aerial lift and boom, all tools and equipment, and all parts of a tree
  - If minimum approach distance cannot be maintained at all times, contact owner of electrical lines to coordinate safe work clearance

Safe Operations

Wear fall protection equipment

- Lanyard attached to manufacturer's attachment point
  - Boom or bucket/platform
- Do not connect lanyard to adjacent equipment, poles, trees or structures

Safe Operations

Keep both feet firmly on floor of the platform

- Do not sit or climb on rail
- Do not lean far out
- Do not use ladders, blocks or other elevators inside platform to increase reach

Safe Operations

Apply appropriate arboriculture practices to prevent uncontrolled tree or branch falls onto equipment

- No spurs worn in bucket

Safe Operations

Loads lift only as approved by manufacturer

- Do not permit > approved number of persons in platform
- Use only manufacturer's approved lift device
  - Do not tie loads to platform or boom
- Ensure loads are balanced
- Consider weight of operator

Safe Operations

- Do not operate lift during periods of high winds
- Never operate a lift alone
  - At least 2 qualified operators always present during lift operations

Safe Operations

- Face direction platform is moving
- Operate controls smoothly

Safe Operations

Continuously inspect for potential hazards and re-evaluate safe operation

- Be aware of location of boom and platform in relation to other structures, objects and hazards
- Communicate any changes in work plan to all workers

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Safe Operations

Recognize and avoid key crush points whenever lift is in operation

- Focused on location of all persons relevant to lift movement
- Command and response prior to lift movement

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Safe Operations

Workers shall not operate the lower controls without the direct knowledge and express permission of the worker in the bucket/platform, unless an emergency exists

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Safe Operations

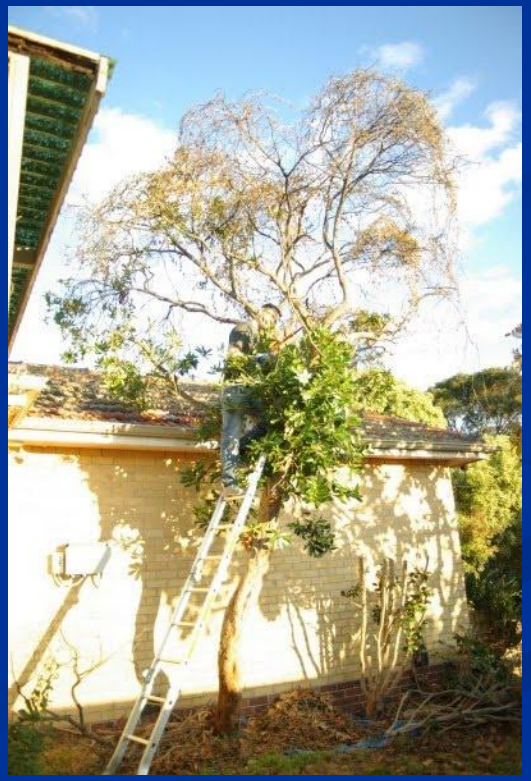
Cease operation if any part of lift breaks or malfunctions

- Qualified repair technician must conduct repairs and tests before continuing operations.

Ladder Inspection

Avoid failure of parts and falls

- Rivets and bolts firm and in place
- Rungs and rails sound and free of defects
- Non-skid feet secure and sound.



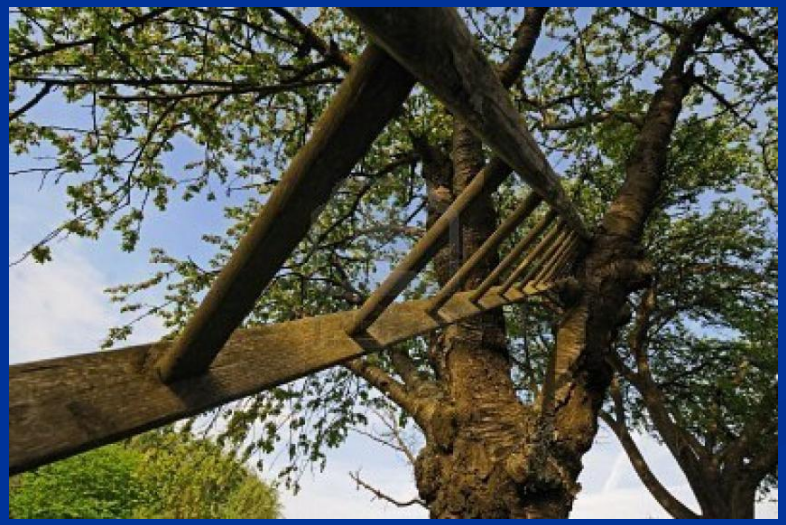
Ladder Safety Operation

Person or ladder fall hazard

- Tired or dizzy, do not climb ladder
- Do not use ladder in high winds or storms
- Wear slip-resistant shoes
- Select proper size ladder for job
  - Climber should not stand on top rung or step

Ladder Safety Operation

- Duty Rating of ladder > total weight of climber, tools, supplies, and other objects placed upon ladder
- Place ladder on firm level ground
- Avoid slippery condition base or top support points
- Only one person on ladder
- Read safety information labels
- Never jump on/off or slide down ladder



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Ladder Safety Operation

- Must be secured while working or before leaving ladder
- Utilize three points-of-contact
- Climb one rung/step at a time
- Keep center of belt buckle between rails.

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Chippers

Chippers process wood into compact chips

- Reduce large volume of wood into small area
- Easy to transport and dispose

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Chipper Safety

Proper training and practices critical

- Daily inspection and maintenance
- Proper towing procedures
- Starting and stopping procedures
- Safe feeding of wood

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Chipper Accidents

- Broken bones from wood strikes
- Lacerations/contusions from moving branch strikes
- Eye injuries
- Body parts processed

Chipper Safety

Always wear appropriate PPE

- Protective helmet
- Eye protection
- Hearing protection
- Properly fitting clothing
- Work boots

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Chipper Safety

Do not wear:

- Loose clothing
- Jewelry
- Gauntlet-type gloves
- Climbing saddles
- Harnesses/lanyards
- Back support belts

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Chipper Safety

Feeding wood into chipper

- Clear tripping hazards from near chipper
- No part of operator's body should ever enter chute area
- Avoid placing rocks, metal or other debris into chipper with wood

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Chipper Safety

When feeding material

- Large (butt) end goes in first
- Feed from side of apron
- Move quickly to side after throwing material into chute
- Small wood can be pushed in with a larger branches
- Small branches remaining in chute will be pulled in by next branch

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Chipper Safety

When feeding material

- No foreign material (stones, cabling hardware, nails, etc.)
- Suspect wood should be hauled away

Manage ropes to avoid entanglement/uptake into chipper

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Chipper Safety

Do Not conduct chipper maintenance unless it is off & locked

- Key off and out of ignition
- Cutter wheel completely stopped
- Lock pins installed.

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Use only qualified personnel and Follow all manufacturer's instructions

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